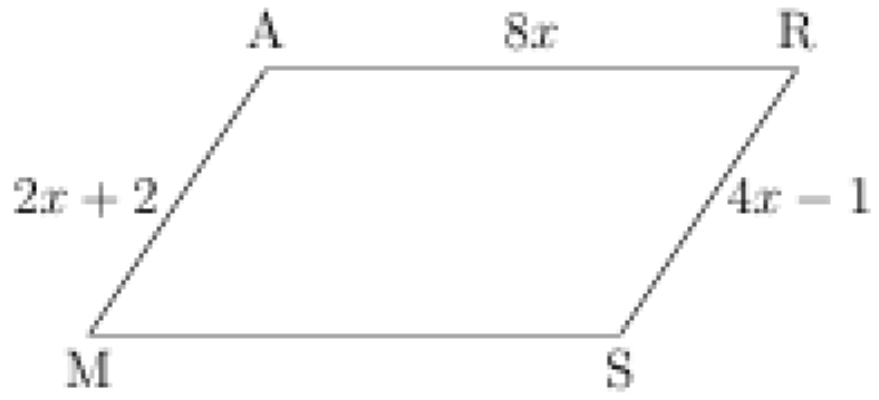
Topic: Measures of parallelograms

Question: Find the length of the line segment.

In parallelogram $MARS$, find MS.



Answer choices:

A 1.5

B 5

C 8.5

D 12

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Solution: D

Opposite sides of a parallelogram are congruent, so

$$4x - 1 = 2x + 2$$

$$2x = 3$$

$$x = 1.5$$

Therefore, we can say

$$AR = 8x = 8(1.5) = 12$$

$MS = AR$, therefore

$$MS = 12$$

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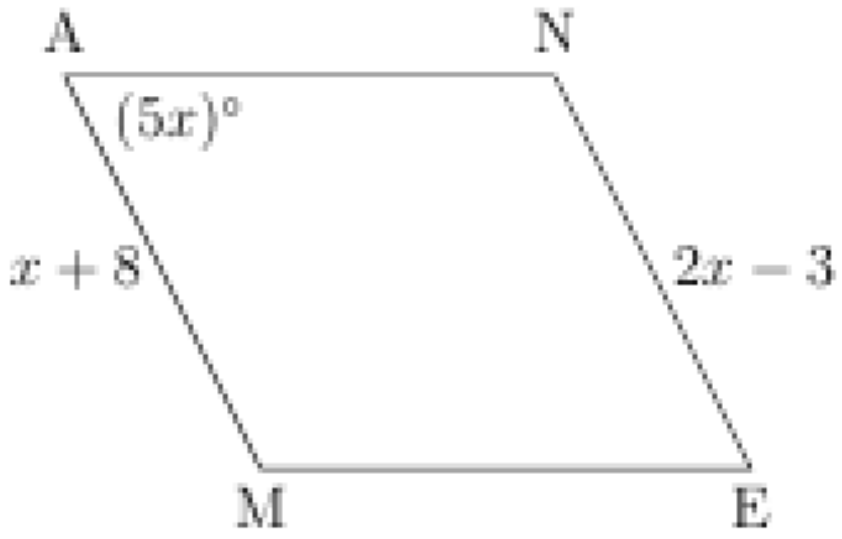
Topic: Measures of parallelograms

Question: Find the measure of the angle.

In parallelogram $MANE$ find $m\angle E$.



Answer choices:

A $55°$

B $65°$

C $85°$

D $125°$

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Solution: A

Opposite sides of a parallelogram are congruent, so we can say

$$2x - 3 = x + 8$$

$$x = 11$$

So the measure of angle A is

$$m\angle A = (5x)^\circ = 5(11)^\circ = 55^\circ$$

Opposite angles of a parallelogram are congruent, so $m\angle E = m\angle A$, and we can say

$$m\angle E = 55^\circ$$

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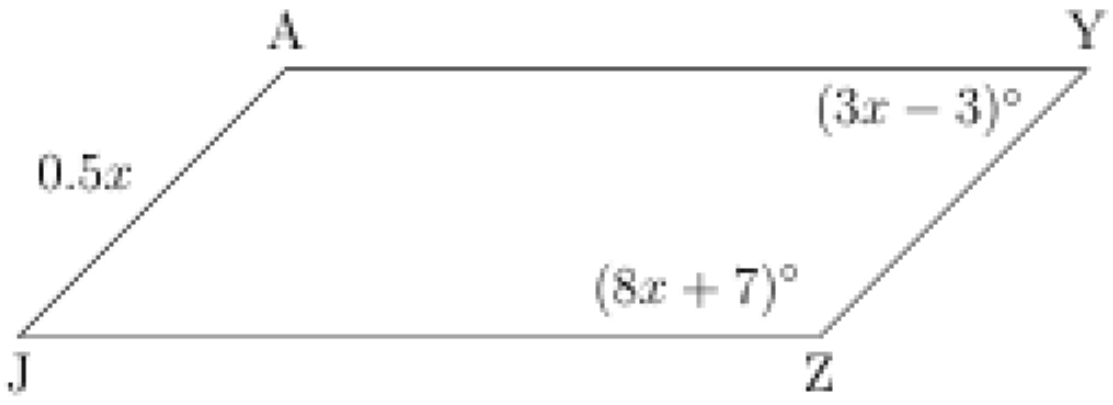
Topic: Measures of parallelograms

Question: Find the length of the line segment.

In parallelogram $JAYZ$ find AJ.



Answer choices:

A 5

B 6

C 8

D 10

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Solution: C

Consecutive angles of a parallelogram are supplementary, (angles next to each other add up to $180°$) so

$$(3x - 3) + (8x + 7) = 180$$

$$11x + 4 = 180$$

$$11x = 176$$

$$x = 16$$

Therefore,

$$AJ = 0.5x = 0.5(16) = 8$$

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